REMARKS

After entry of this amendment, claims 126–129, 133–134, 140–143, 159–170, 177–182, 188–197, 200, 204, 208–232, 234–235, and 239 will be pending. Claims 1–125, 130–132, 135–139, 144–158, 171–176, 183–187, 198–199, 201–203, 205–207, 233, 236–238, and 240–241 are cancelled, and claims 128, 200, and 239 have been amended. Basis for the claim amendments may be found, for example, in previously filed claims, as well as in Figures 11A – 11F and related text. Applicants submit that no new matter has been introduced by these amendments.

Applicants note with appreciation that the Examiner has allowed claims 133, 134, 140–143, 159–170, 177–182, 188–197, 204, 208–235, and 239.

Applicants also note with appreciation that the Examiner has indicated that claims 128 and 129 would be allowable if rewritten in independent form. Applicants have rewritten claim 128 in independent form. Claim 129 is dependent on independent claim 128, and is patentable in that it depends on an allowable claim.

Claim rejections under 35 U.S.C. §112

Claim 116 is rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. This rejection is moot in view of the cancellation of claim 116.

Claim rejections under 35 U.S.C. §102

Claims 126 and 127 are rejected under 35 U.S.C. §102(e) as directly anticipated by Soref et al., U.S. Patent No. 6,154,475 ("Soref"). Soref teaches a family of lasers for growth on a silicon platform. Soref does not mention etch-stop layers. In an embodiment to which the examiner refers, a laser may include an optional dielectric spacer layer 17, i.e., a lattice-matched p-type $Si_{0.5}Ge_{0.5}$ waveguide-cladding layer. Soref is silent regarding the doping level of this p-type layer, but applicants note that another layer described as p-type, i.e., the p-type SiGe collector layer, has a doping level of $3x10^{18}/cm^3$. *See* column 4, lines 52–65. Moreover, a portion of the optional spacer layer 17 is removed during an etch step to expose a portion of underlying collector layer 5, as indicated in Figure 1. The optional p-type spacer layer 17, therefore, does not function as an etch-stop layer as required by claim 126. Moreover, Soref does

not teach or suggest a doping level below 10^{18} atoms/cm^3, as also recited in independent claim 126.

Applicants submit that for at least these reasons, independent claim 126, and claims dependent therefrom, are patentable.

Claim 200 is rejected under 35 U.S.C. § 102(e) as directly anticipated by Chu et al, U.S. Patent No. 5,906,951 ("Chu"). Chu describes forming a structure that includes a p^{++}-doped $Si_{1-x}Ge_x$ etch-stop layer 15, a strained Si channel layer 16 over the etch-stop layer, and a relaxed $Si_{1-x}Ge_x$ layer 18 over both the etch-stop layer 15 and the strained Si channel 16. *See*, e.g., Fig. 3. The strained Si channel layer 16, therefore, is not an etch-stop layer; rather, it is a channel layer. Moreover, Chu does not teach a relaxed $Si_{1-w}Ge_w$ layer disposed directly over and in contact with the etch-stop layer, as recited in amended independent claim 200.

Applicants submit that for at least this reason, amended independent claim 200 is patentable.

CONCLUSION

In light of the foregoing, Applicants respectfully submit that all claims are now in condition for allowance.

If the Examiner believes that a telephone conversation with Applicants' attorney would expedite allowance of this application, the Examiner is cordially invited to call the undersigned attorney at (617)570-1806.

Applicants believe that no fee is necessitated by the filing of this amendment. However, if any fee is due, please charge said fee occasioned by this paper to our Deposit Account No. 07-1700.

Respectfully submitted,

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Reg. No. 44,381

Natasha C. Us
Attorney for the Applicants
Goodwin | Procter LLP
Exchange Place
Boston, Massachusetts 02109

Tel. No.: (617) 570-1806
Fax No.: (617) 523-1231